Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-327

C-5 Reliability Enhancement and Re-engining Program (C-5 RERP)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President’s Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

C-5 Reliability Enhancement and Re-engining Program (C-5 RERP)

DoD Component

Air Force

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References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 24, 2008

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated October 7, 2010

Mission and Description

The C-5 Reliability Enhancement and Re-engining Program (C-5 RERP) is the second phase of a two-phase modernization program for the C-5. The Avionics Modernization Program was Phase I and is the baseline for C-5 RERP. Following completion of Phase II, C-5 RERP, the aircraft is designated a C-5M. C-5 RERP is a comprehensive modernization effort that will improve aircraft reliability, maintainability, and availability. C-5 RERP will enable the C-5M to achieve wartime mission requirements by increasing fleet availability (mission capable rates and departure reliability), reducing total ownership costs, and improving aircraft performance. This effort centers on replacing the current TF39 engine with a more reliable, commercial off-the-shelf General Electric (GE) CF6-80C2 (F138-GE-100 military designation) turbofan engine with increased takeoff thrust, stage-3 noise compliance, and Federal Aviation Regulation pollution compliance. In addition to new engines/pylons, C-5 RERP will provide upgrades to wing attachment fittings; new thrust reversers and auxiliary power units; upgrades to the electrical, hydraulic, fuel, fire suppression, landing gear, and pressurization/air conditioning systems; and airframe structural modifications. These aircraft improvements increase payload capability and access to communication, navigation, surveillance/air traffic management airspace. C-5 RERP also decreases aircraft time-to-climb, increases engine -out climb gradient for takeoff, improves transportation system throughput, and decreases engine removals.

The procurement tempo to deliver a C-5 RERP aircraft is a three-year process. The first year is advance procurement of material with longer than 12 months duration to buy and deliver, the second year involves material procurement and fabrication, while the third and final year is installation on the aircraft.

Executive Summary

Lockheed Martin Aeronautics (LMA) delivered nine C-5M aircraft to the Air Force in 2015. The total complement of aircraft for Dover Air Force Base (AFB) was completed in 2014. Travis AFB received 9 aircraft, bringing their complement of aircraft to 14 as of December 31, 2015. The 9 deliveries in CY 2015 brought the total number of C-5Ms delivered to 32 aircraft. In addition, LMA delivered 2 aircraft in CY 2016 bringing the total C-5M fleet to 34 aircraft as of February 22, 2016.

Aircraft 68-0213, the first C-5C model to undergo the RERP modification, was delivered on April 24, 2015 and was ferried to Stewart Air National Guard Base (ANGB) for refurbishment before final delivery to Travis AFB.

A “handshake” agreement was reached during negotiations for the FY 2015 Lot 7 Production (Install) contract on the first day of “face-to-face” negotiations on July 6, 2015. The contract was awarded on August 13, 2015 and is the final lot buy for RERP.

Since the introduction of a government advisory team and an onsight representative in CY 2013, an improved LMA production feedback process and streamlined LMA/Defense Contract Management Agency flight operations process have stablized the RERP modification line. Significant savings have been achieved in several modification phases: aircraft induction timelines have been reduced 32 percent; aircraft modification timelines have been reduced 15 percent; quality assurance steps have been reduced 16 percent and functional testing has been reduced 8 percent. Together these reductions have reduced the delivery time from 678 calendar days in CY 2013 to 479 calendar days in CY 2015, a reduction of 199 calendar days (29 percent). LMA delivered nine of nine aircraft scheduled for delivery in CY 2015 and two of eight aircraft planned for delivery in CY 2016. Thirty-four of fifty-two aircraft have been modified to the C-5M configuration as of February 22, 2016.

A C-5 Safety Investigation Board (SIB) convened January 5, 2015 in response to multiple gear strikes causing a Class B mishap during acceptance testing at LMA. The number one main landing gear malfunctioned twice on two separate acceptance test flights while conducting hydraulic pressure tests during landing gear retraction. The SIB completed its investigation January 29, 2015 and the formal outbrief to the Air Force Life Cycle Management Center commander was held February 20, 2015. All recommendations were implemented. The aircraft completed acceptance testing March 31, 2015 and was delivered on April 6, 2015. The aircraft was ferried to Stewart ANGB for refurbishment on April 8, 2015 prior to delivery to Travis AFB.

At Air Mobility Command's request, the C-5 team successfully expedited delivery and fielding of updated C-5 software (Operational Flight Program version 3.5.2) and associated logistics support to include training, technical orders and the Time Compliance Technical Order (TCTO). The new software fixed a number of nuisance errors and also eliminated a safety risk during takeoff and landing. The contract was awarded January 29, 2015; aircrew training was completed March 31, 2015; and the TCTO was completed on all fielded aircraft (total of 30) in November 2015. The first Lot 6 production aircraft to be delivered with the new software occurred October 21, 2015.

On April 2, 2015, C-5M 85-0010, from Travis AFB, set 46 world records in the time to climb category with a 264,000 pound payload. Gross takeoff weight was 735,222 pounds. The records have been validated and certified by the National Aeronautics Association and the Federation Aeronautique Internationale. The C-5M Super Galaxy is now the top aviation record holder with a total of 89 world records; beating the AN-225 (73 records) and the B-1B (83 records).

The C-5 RERP CPD requires the C-5M to achieve a wartime Mission Capability Rate (MCR) of 75 percent. Since the start of production in October 2010, the C-5M has demonstrated that capability during several events. The latest event was three C-5Ms supporting real-world movement of helicopters and other equipment from Rota Air Base Portugal to Afganistan from December 6, 2015 to January 2, 2016. During this period, the aircraft flew 41 sorties and achieved an impressive 90.5 percent MCR.

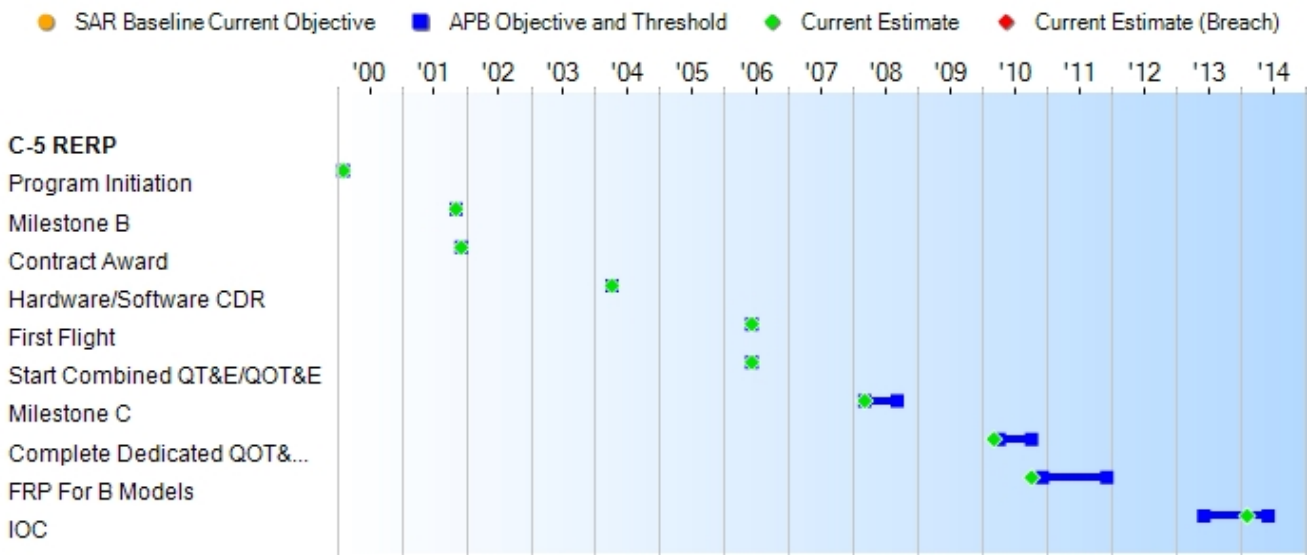
There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	**SAR Baseline Production Estimate**	**Current APB Production Objective/Threshold**		**Current Estimate**
Program Initiation	Feb 2000	Feb 2000	Feb 2000	Feb 2000
Milestone B	Nov 2001	Nov 2001	Nov 2001	Nov 2001
Contract Award	Dec 2001	Dec 2001	Dec 2001	Dec 2001
Hardware/Software CDR	Apr 2004	Apr 2004	Apr 2004	Apr 2004
First Flight	Jun 2006	Jun 2006	Jun 2006	Jun 2006
Start Combined QT&E/QOT&E	Jun 2006	Jun 2006	Jun 2006	Jun 2006
Milestone C	Mar 2008	Mar 2008	Sep 2008	Mar 2008
Complete Dedicated QOT&E (AFOTEC Report complete)	Apr 2010	Apr 2010	Oct 2010	Mar 2010
FRP For B Models	Dec 2010	Dec 2010	Dec 2011	Oct 2010
IOC	Jun 2013	Jun 2013	Jun 2014	Feb 2014

Change Explanations

None

Acronyms and Abbreviations

AFOTEC - Air Force Operational Test and Evaluation Center
CDR - Critical Design Review
QOT&E - Qualification Operational Test and Evaluation
QT&E - Qualification Test and Evaluation

Performance

Performance Characteristics				
SAR Baseline Production Estimate	**Current APB Production Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Time To Climb/Initial Level Off				
837,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	837,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	769,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	837,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min	Will meet or exceed Current APB Threshold. 769,000 lbs take-off gross weight; RCR 23; climb condition: 77 deg F; SL to 31,000 ft in less than 25 min
Aircraft Take-off Climb Gradient				
One engine out climb gradient >=3.3% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23	One engine out climb gradient >=3.3% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23	One engine out climb gradient >=2.5% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23	One engine out climb gradient >= 3.3% beginning at departure end of runway/ 837,000 lbs takeoff weight; hot day (103 deg F)/ 10,000 ft runway/ SL/ RCR 23	Will meet or exceed Current APB Threshold. One engine out climb gradient >=2.5% beginning at departure end of runway / 837,000 lbs take-off weight / hot day (103 deg F) / 10,000 ft runway / SL / RCR 23
Mission Capable Rate (MCR)				
Wartime >= 82% and Peacetime >= 75%	Wartime >= 82% and Peacetime >= 75%	Wartime >= 75%	SDD (81.6%)/ QOT&E (66% & 76%)/ CONOPS I Surge (78%) & CONOPS II Surge (89%)/ AMC/ AFTRANS Surge (90%); Wartime >= 75% & Peace time >= 82%	Will meet or exceed Current APB Threshold. Wartime >= 75%
Noise Compliance				
Certifiable under FAR Part 36 Stage 4 noise standards	Certifiable under FAR Part 36 Stage 4 noise standards	Certifiable under FAR part 36 Stage 3 noise standards	Certifiable under FAR Part 36 Stage 4 noise standards	Will meet or exceed Current APB Threshold. Certifiable under FAR part 36 Stage 3 noise standards
Emission Compliance				
Certifiable under FAR Part 34 emission	Certifiable under FAR Part 34 emission	Certifiable under FAR Part 34 emission	Certifiable under FAR Part 34 emission requirements	Will meet or exceed Current APB Threshold. Certifiable

requirements	requirements	requirements		under FAR Part 34 emission requirements

Requirements Reference

Capability Production Document (CPD) Change 1 dated December 1, 2009

Change Explanations

None

Notes

Demonstrated performance reflects the outcome of Flight Test completed during SDD on August 18, 2008; QOT&E completed on March 8, 2010; and Post-QOT&E Real-World Surge Exercises.

Acronyms and Abbreviations

AFTRANS - Air Forces Transportation
AMC - Air Mobility Command
CONOPS - Concept of Operations
deg - degrees
F - Fahrenheit
FAR - Federal Aviation Regulation
ft - feet
lbs - pounds
min - minutes
QOT&E - Qualification Operational Test and Evaluation
RCR - Runway Condition Reading
SDD - System Design and Development
SL - Sea Level

Track to Budget

RDT&E

Appn	BA	PE
Air Force	07	0401119F

Project	Name	
674835	C-5 Airlift Squadrons/C-5 Reliability Enhancement & Reengining Program (RERP)	(Sunk)

Procurement

Appn	BA	PE
Air Force	07	0401119F

Line Item	Name		
000075	C-5 Reliability Enhancement and Reengining Program (RERP)	(Shared)	(Sunk)

Appn	BA	PE
Air Force	06	0401119F

Line Item	Name		
000999	Initial spares and repair parts	(Shared)	(Sunk)

Appn	BA	PE
Air Force	05	0401119F

Line Item	Name	
C00500	C-5 Reliability Enhancement and Reengining Program (RERP)	(Sunk)
C005M0	C-5M	(Sunk)

MILCON

Appn	BA	PE
Air Force	01	0401896F

Project	Name	
103003	C-5 Reliability Enhancement and Reengining Program (RERP)	(Sunk)

Notes: Training facility at Dover Air Force Base

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2008 $M			BY 2008 $M	TY $M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	1722.9	1734.3	1907.7	1691.4	1643.5	1645.0	1601.2
Procurement	5415.9	5396.3	5935.9	5001.6	6042.1	5860.4	5460.1
Flyaway	--	--	--	4170.6	--	--	4560.3
Recurring	--	--	--	4170.6	--	--	4560.3
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	831.0	--	--	899.8
Other Support	--	--	--	291.1	--	--	316.4
Initial Spares	--	--	--	539.9	--	--	583.4
MILCON	7.8	5.1	5.6	5.0	8.5	5.3	5.3
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	7146.6	7135.7	N/A	6698.0	7694.1	7510.7	7066.6

Confidence Level

Confidence Level of cost estimate for current APB: 50%

Confidence Level for current Acquisition Program Baseline (APB) cost is 50%. The Independent Cost Estimate (ICE) to support C-5 RERP Full Rate Production decision, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation (CAPE), is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for Major Defense Acquisition Program (MDAPs) programs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	3	3	3
Procurement	49	49	49
Total	52	52	52

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	1601.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1601.2
Procurement	5460.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5460.1
MILCON	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	7066.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7066.6
PB 2016 Total	7090.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7090.6
Delta	-24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-24.0

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	3	0	0	0	0	0	0	0	0	3
Production	0	49	0	0	0	0	0	0	0	49
PB 2017 Total	3	49	0	0	0	0	0	0	0	52
PB 2016 Total	3	49	0	0	0	0	0	0	0	52
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2000	--	--	--	--	--	--	16.3
2001	--	--	--	--	--	--	39.6
2002	--	--	--	--	--	--	83.7
2003	--	--	--	--	--	--	191.4
2004	--	--	--	--	--	--	260.2
2005	--	--	--	--	--	--	278.2
2006	--	--	--	--	--	--	222.9
2007	--	--	--	--	--	--	137.6
2008	--	--	--	--	--	--	161.6
2009	--	--	--	--	--	--	80.9
2010	--	--	--	--	--	--	62.4
2011	--	--	--	--	--	--	54.4
2012	--	--	--	--	--	--	12.0
Subtotal	3	--	--	--	--	--	1601.2

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2000	--	--	--	--	--	--	19.0
2001	--	--	--	--	--	--	45.6
2002	--	--	--	--	--	--	95.4
2003	--	--	--	--	--	--	215.4
2004	--	--	--	--	--	--	285.5
2005	--	--	--	--	--	--	297.3
2006	--	--	--	--	--	--	231.4
2007	--	--	--	--	--	--	139.2
2008	--	--	--	--	--	--	160.3
2009	--	--	--	--	--	--	79.2
2010	--	--	--	--	--	--	60.3
2011	--	--	--	--	--	--	51.6
2012	--	--	--	--	--	--	11.2
Subtotal	3	--	--	--	--	--	1691.4

Annual Funding 3010 | Procurement | Aircraft Procurement, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2007	--	52.5	--	--	52.5	9.0	61.5
2008	1	132.6	--	--	132.6	61.3	193.9
2009	3	289.9	--	--	289.9	46.7	336.6
2010	5	482.9	--	--	482.9	72.3	555.2
2011	7	636.5	--	--	636.5	187.1	823.6
2012	11	823.3	--	--	823.3	329.1	1152.4
2013	11	1002.7	--	--	1002.7	120.1	1122.8
2014	11	853.2	--	--	853.2	43.5	896.7
2015	--	286.7	--	--	286.7	30.7	317.4
Subtotal	49	4560.3	--	--	4560.3	899.8	5460.1

Annual Funding 3010 | Procurement | Aircraft Procurement, Air Force							
Fiscal Year	Quantity	BY 2008 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2007	--	52.2	--	--	52.2	9.0	61.2
2008	1	129.9	--	--	129.9	60.0	189.9
2009	3	279.3	--	--	279.3	45.0	324.3
2010	5	456.3	--	--	456.3	68.3	524.6
2011	7	592.1	--	--	592.1	174.1	766.2
2012	11	754.4	--	--	754.4	301.5	1055.9
2013	11	900.1	--	--	900.1	107.8	1007.9
2014	11	755.7	--	--	755.7	38.5	794.2
2015	--	250.6	--	--	250.6	26.8	277.4
Subtotal	49	4170.6	--	--	4170.6	831.0	5001.6

Cost Quantity Information 3010 | Procurement | Aircraft Procurement, Air Force		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2008 $M**
2007	--	--
2008	1	176.2
2009	3	294.5
2010	5	468.7
2011	7	639.4
2012	11	914.8
2013	11	808.1
2014	11	868.9
2015	--	--
Subtotal	49	4170.6

Annual Funding 3300 | MILCON | Military Construction, Air Force	
Fiscal Year	**TY $M** **Total Program**
2010	5.3
Subtotal	5.3

Annual Funding 3300 | MILCON | Military Construction, Air Force	
Fiscal Year	**BY 2008 $M**
	Total Program
2010	5.0
Subtotal	5.0

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	11/5/2001	3/25/2008
Approved Quantity	12	16
Reference	Milestone B ADM	Milestone C ADM
Start Year	2006	2007
End Year	2010	2012

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the C-5 RERP Milestone C ADM approving an LRIP quantity of 16 systems as being necessary to maintain a steady ramp to FRP. The start year changed from the Initial LRIP Decision to the Current Total LRIP during the Nunn-McCurdy restructure.

The procurement tempo to deliver a C-5 RERP aircraft is a three-year process. The first year is advance procurement of material with longer than 12 months duration to buy and deliver. The second year involves material procurement and fabrication, while the third and final year is installation on the aircraft.

Foreign Military Sales

None

Nuclear Costs

None

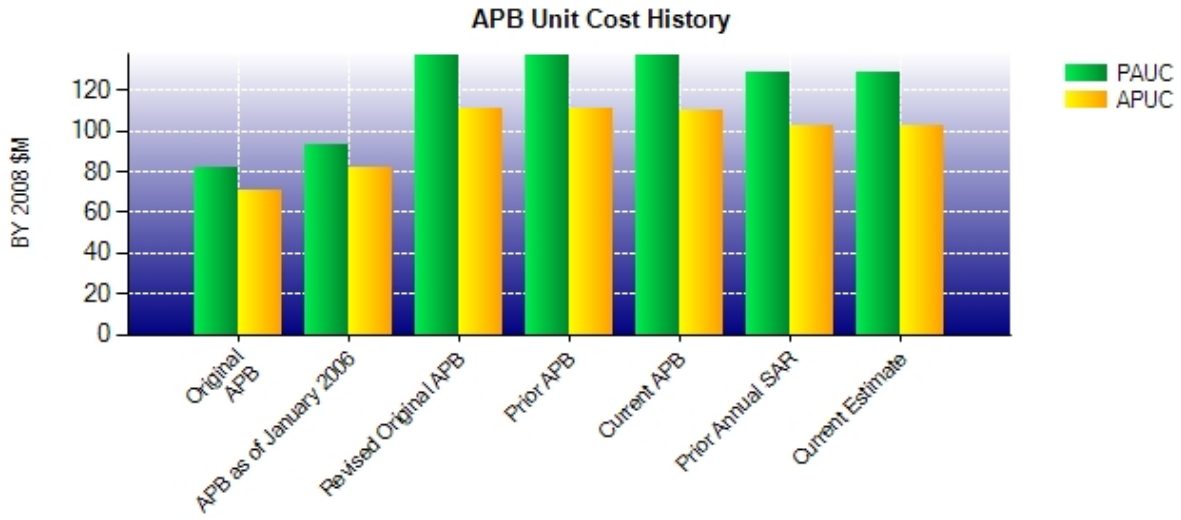
Unit Cost

Unit Cost Report

Item	BY 2008 $M Current UCR Baseline (Oct 2010 APB)	BY 2008 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	7135.7	6698.0	
Quantity	52	52	
Unit Cost	137.225	128.808	-6.13
Average Procurement Unit Cost			
Cost	5396.3	5001.6	
Quantity	49	49	
Unit Cost	110.129	102.073	-7.32

Item	BY 2008 $M Revised Original UCR Baseline (Jun 2008 APB)	BY 2008 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	7146.6	6698.0	
Quantity	52	52	
Unit Cost	137.435	128.808	-6.28
Average Procurement Unit Cost			
Cost	5415.9	5001.6	
Quantity	49	49	
Unit Cost	110.529	102.073	-7.65

Unit Cost History



Item	Date	BY 2008 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Nov 2001	81.955	71.010	88.047	78.293
APB as of January 2006	Feb 2005	92.829	81.564	98.252	88.355
Revised Original APB	Jun 2008	137.435	110.529	147.963	123.308
Prior APB	Jun 2008	137.435	110.529	147.963	123.308
Current APB	Oct 2010	137.225	110.129	144.437	119.600
Prior Annual SAR	Dec 2014	128.998	102.280	136.358	111.920
Current Estimate	Dec 2015	128.808	102.073	135.896	111.431

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
88.047	0.635	55.435	10.863	-1.056	-6.673	0.000	0.712	59.916	147.963

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
147.963	-2.469	0.000	0.000	0.000	-6.554	0.000	-3.044	-12.067	135.896

Initial SAR Baseline to Current SAR Baseline (TY $M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
78.293	0.640	32.062	7.029	0.000	-4.756	0.000	10.040	45.015	123.308

Current SAR Baseline to Current Estimate (TY $M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
123.308	-2.420	0.000	0.000	0.000	-6.227	0.000	-3.231	-11.878	111.431

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	Feb 2000	Feb 2000	Feb 2000
Milestone B	N/A	Nov 2001	Nov 2001	Nov 2001
Milestone C	N/A	Dec 2006	Mar 2008	Mar 2008
IOC	N/A	Mar 2010	Jun 2013	Feb 2014
Total Cost (TY $M)	N/A	11093.9	7694.1	7066.6
Total Quantity	N/A	126	52	52
PAUC	N/A	88.047	147.963	135.896

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	1643.5	6042.1	8.5	7694.1
Previous Changes				
Economic	-9.4	-105.7	-0.2	-115.3
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-32.9	-316.1	-3.0	-352.0
Other	--	--	--	--
Support	--	-136.2	--	-136.2
Subtotal	-42.3	-558.0	-3.2	-603.5
Current Changes				
Economic	-0.2	-12.9	--	-13.1
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+0.2	+11.0	--	+11.2
Other	--	--	--	--
Support	--	-22.1	--	-22.1
Subtotal	--	-24.0	--	-24.0
Total Changes	-42.3	-582.0	-3.2	-627.5
CE - Cost Variance	1601.2	5460.1	5.3	7066.6
CE - Cost & Funding	1601.2	5460.1	5.3	7066.6

Summary BY 2008 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Production Estimate)	1722.9	5415.9	7.8	7146.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-31.7	-280.9	-2.8	-315.4
Other	--	--	--	--
Support	--	-123.3	--	-123.3
Subtotal	-31.7	-404.2	-2.8	-438.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+0.2	+9.8	--	+10.0
Other	--	--	--	--
Support	--	-19.9	--	-19.9
Subtotal	+0.2	-10.1	--	-9.9
Total Changes	-31.5	-414.3	-2.8	-448.6
CE - Cost Variance	1691.4	5001.6	5.0	6698.0
CE - Cost & Funding	1691.4	5001.6	5.0	6698.0

Previous Estimate: December 2014

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.2
Adjustment for current and prior escalation. (Estimating)	+0.2	+0.2
RDT&E Subtotal	+0.2	0.0

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-12.9
Revised estimate to reflect actuals. (Estimating)	-0.5	-0.7
Adjustment for current and prior escalation. (Estimating)	+10.3	+11.7
Adjustment for current and prior escalation. (Support)	+1.2	+1.2
Decrease in Other Support related to Depot Activation. (Support)	-1.5	-1.6
Decrease in Initial Spares to reflect actuals and refined estimating assumptions. (Support)	-19.6	-21.7
Procurement Subtotal	-10.1	-24.0

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: C-5 RERP FRP Lot 5
Contractor: Lockheed Martin
Contractor Location: 86 South Cobb Drive
Marietta, GA 39963-0290
Contract Number: FA8625-07-C-6471/5
Contract Type: Fixed Price with Economic Price Adjustment (FPEPA)
Award Date: October 20, 2010
Definitization Date: October 20, 2010

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
162.9	N/A	11	1099.1	N/A	11	1099.1	1099.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 5: Long lead, material/fabrication, installation, initial spares, readiness spares package, rapid repair and response, and support equipment.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPEPA) contract.

General Contract Variance Explanation

Cost and schedule variances are not reported for this contract, because an EVM waiver was granted in an ADM, dated October 07, 2010, due to fixed price production contract.

Notes

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement

Contract Name: C-5 RERP FRP Lot 6

Contractor: Lockheed Martin

Contractor Location: 86 South Cobb Drive
Marietta, GA 39963-0290

Contract Number: FA8625-07-C-6471/6

Contract Type: Fixed Price with Economic Price Adjustment (FPEPA)

Award Date: October 21, 2011

Definitization Date: October 21, 2011

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
160.0	N/A	11	1014.6	N/A	11	1014.6	1014.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 6: Long lead, material/fabrication, installation, initial spares, readiness spares package, rapid repair and response, and support equipment.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPEPA) contract.

Contract Identification

Appropriation: Procurement

Contract Name: C-5 RERP FRP Lot 7

Contractor: Lockheed Martin

Contractor Location: 86 Cobb Drive
Marietta, GA 39963-0290

Contract Number: FA8625-07-C-6471/7

Contract Type: Fixed Price with Economic Price Adjustment (FPEPA)

Award Date: October 19, 2012

Definitization Date: October 19, 2012

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
155.5	N/A	11	1088.0	N/A	11	1088.0	1088.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modification adding the following to Lot 7: Long lead, material/fabrication, installation, and rapid repair and response.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FPEPA) contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	3	3	3	100.00%
Production	30	31	49	63.27%
Total Program Quantity Delivered	33	34	52	65.38%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	7066.6	Years Appropriated	16
Expended to Date	5450.4	Percent Years Appropriated	100.00%
Percent Expended	77.13%	Appropriated to Date	7066.6
Total Funding Years	16	Percent Appropriated	100.00%

The above data is current as of February 09, 2016.

RERP 3010/3600 expenditures as of February 9, 2016.
Scheduled deliveries are based on the award of the Production Contract Schedule Re-Baseline modification, dated November 6, 2012.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:

Source of Estimate:

Quantity to Sustain:

Unit of Measure:

Service Life per Unit:

Fiscal Years in Service:

O&S costs are not tracked separately for C-5 RERP. O&S costs are included in the overall operational costs for the existing C-5 fleet managed by the program office at Robins Air Force Base.

Sustainment Strategy

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Antecedent Information

No Antecedent

Annual O&S Costs BY2008 $M		
Cost Element	**C-5 RERP N/A**	**N/A (Antecedent) N/A**
Unit-Level Manpower	0.000	0.000
Unit Operations	0.000	0.000
Maintenance	0.000	0.000
Sustaining Support	0.000	0.000
Continuing System Improvements	0.000	0.000
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	--	--

Item	Total O&S Cost $M			
	C-5 RERP			N/A (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	N/A	N/A	N/A	N/A
Then Year	N/A	N/A	N/A	0.0

O&S Cost Variance

Category	BY 2008 $M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2014 SAR	0.0	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	0.0	
Current Estimate	0.0	

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2008 $M):